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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/889,851	10/17/2001	Sture Petterson	P120US00	1188

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ARLINGTON, VA 22202

EXAMINER

MORAN, TIMOTHY J

ART UNIT	PAPER NUMBER
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2878

DATE MAILED: 08/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

09/899,851

Examiner

Timothy J. Moran

Applicant(s)

HIRAMITSU, NARUAKI

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-- The MAILING DATE f this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-8 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

International Reports

The references cited in the Search Report completed June 8, 2000 have been considered, but will not be listed on any patent resulting from this application because they were not provided on a separate list in compliance with 37 CFR 1.98(a)(1). In order to have the references printed on such resulting patent, a separate listing, preferably on a PTO-1449 form, must be filed within the set period for reply to this Office action.

The International Preliminary Examination Report completed March 2, 2001 has been considered.

Information Disclosure Statement

The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4, 7, and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 4, the inclusion of the limitation (in lines 2-3) "a pore spacing less than the image detector pixel size" implies that the limitation (in claim 1, lines 5-6) "a pore spacing corresponding to the image detector pixel size" has been removed from claim 1, which is improper.

Regarding claims 7 and 8, the inclusion of the limitation (in lines 1-2) "a pore spacing less than the image detector pixel size" implies that the limitation (in claim 5, lines 4-5) "a pore spacing corresponding to the image detector pixel size" has been removed from claim 5, which is improper.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 3-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Apte, U. S. Patent No. 6,177,236. Regarding claim 1, Apte describes a method for fabricating a structured scintillating device characterized by the steps of fabrication of a silicon pore matrix (fig. 2, col. 7, lines 6-16) presenting a pore spacing corresponding to

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an image detector pixel size (fig. 4, col. 8, lines 32-39), by utilizing silicon etching techniques (col. 8, lines 40-57) such as ion beam etching (see abstract) providing high aspect ratios (col. 10, lines 37-49), and using the silicon pore matrix as a mold when melting scintillator material into the pores (col. 11, lines 39-55). Regarding the limitation "in order to eliminate grain-boundary scattering of scintillating photons," it is considered inherent to the melting process.

Regarding claim 3, Apte describes the step of providing a reflection layer by depositing a metallic reflection layer (col. 8, line 58 – col. 9, line 11).

Regarding claim 4, Apte describes the production of a pore spacing less than the pixel size (col. 8, lines 31-39).

Regarding claim 5, Apte describes a scintillating device characterized by utilization of a fabrication method producing a silicon pore matrix (fig. 2, col. 7, lines 6-16) presenting a pore spacing corresponding to an image detector pixel size (fig. 4, col. 8, lines 32-39), the pore matrix having thin walls with thickness down to a few micrometers (col. 7, lines 17-25), where the pore matrix contains scintillating material melted into the pores (col. 11, lines 39-55). Regarding the limitation "in order to eliminate grain-boundary scattering of scintillating photons," it is considered inherent to the melting process.

Regarding claim 6, Apte describes the step of providing a reflection layer by depositing a metallic reflection layer (col. 8, line 58 – col. 9, line 11).

Regarding claims 7 and 8, Apte describes the production of a pore spacing less than the pixel size (col. 8, lines 31-39).

Allowable Subject Matter

Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Claim 2 includes the limitations that a light guiding reflection layer is formed by silicon oxidation or by deposition of a material having a refractive index lower than that of the scintillator material.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Moran whose telephone number is 703-305-0849. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on 703-308-4852. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

T.M.

TM
July 25, 2003


CONSTANTINE HANNAHER
PRIMARY EXAMINER
GROUP ART UNIT 2878